

## REMARKS

Examiner Zarneke is thanked for his thorough examination of the Subject Patent Application. Referring to the rejections of all Claims (1- 25) under 35 USC 102(e), as being anticipated by Leitz et al (US Pat No. 2004/0087117 A1), as presented in the previous final office action of 01/1/05 administered by A Sarkar, as well as the rejection presented in the advisory action of 03/30/05 administered by D Zarneke, amendments to the claims have been made as well as arguments presented for allowance of these claims. Regarding the Leitz et al invention it is obvious that graded layer 420 featuring the highest germanium content at the substrate interface is a seed layer, while the second graded layer 440 used by Leitz is the layer used to underlay the desired relaxed layer. Second graded layer 440 used to underlay and allow formation of the desired overlying relaxed layer is comprised directly opposite in graded composition when compared to applicants invention. That is the highest germanium content is at the interface of relaxed layer 450, therefore not burying the threading dislocations at the other interface as applicant clearly shows.


To highlight the critical differences between the present invention and the Leitz prior art, as well as to more clearly describe applicants invention, independent Claims 1 and 15 have been amended. The amended independent Claims now clearly describe the use of **only one** graded semiconductor alloy layer, unlike the Leitz invention which used seed layer 420, and oppositely graded layer 440. In addition the amended independent Claims also describe the preclusion of a seed layer.

It is obvious that Leitz et al did not understand the burying of threading dislocations in a graded semiconductor alloy layer as evidenced by the fact that the highest germanium content, (which results in the greatest level of dislocations), is located at the interface of relaxed layer 450. If Leitz et al would have recognized this they would have offered a graded layer similar to applicants with the highest germanium content furthest away from the relaxed layer. They did not. The fact that a seed layer directly on the substrate does have a graded profile similar to applicants is irrelevant in terms of burying the threading dislocations due to their oppositely graded semiconductor alloy layer 440 used to underlay relaxed layer 450. Amended Claims 1 and 15 now clearly describe the use of only a single graded semiconductor alloy layer underlying a relaxed ungraded semiconductor alloy layer, with germanium grading featuring deceased germanium content at the relaxed non-graded semiconductor alloy layer interface. In addition independent Claims 1 and 15 now clearly describe the absence of a seed layer on the underlying semiconductor substrate.

It is strongly believed that Applicant's process for a single layer of graded semiconductor alloy uniquely different from the Leitz et al prior art and now described in amended Claims 1 and 15, clearly shows differentiation from that prior art and therefore reconsideration of the rejection of all claims under 35 USC 102 is requested.

CS03-054

It is requested that should Examiner Zarneke not find that the Claims are now Allowable that he call the undersigned attorney at 845-452-5863, to overcome any problems preventing allowance.

Respectfully submitted,  
  
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